

What is claimed is:

1. A rotation transmission device comprising a two-way clutch and a solenoid for controlling the engagement of said two-way clutch, said two-way roller clutch comprising an outer member, an inner member mounted in said outer member, said outer member having an inner cylindrical surface, said inner member having a plurality of flat cam surfaces on its outer periphery so as to be opposite to said cylindrical surface, thereby defining wedge spaces between said cylindrical surface and said cam surfaces, a plurality of rollers each mounted between said cylindrical surface and one of said cam surfaces, a retainer for retaining said rollers circumferentially separate from one another, a switch spring mounted between said retainer and said inner member for biasing said retainer toward a neutral position where said rollers are not engaged in said wedge spaces, a rotor mounted between said solenoid and said retainer so as to be nonrotatable relative to said outer ring, an armature mounted between said retainer and said rotor so as to be nonrotatable relative to said retainer and axially movable toward and away from said rotor, whereby said armature is attracted to said rotor when said solenoid is energized, and a spring mounted between said rotor and said armature for axially biasing said armature away from said rotor,

said rotation transmission device further comprising an engaging plate mounted between said inner member and said armature so as to be nonrotatable relative to said inner member, rotatable relative to said rotor and axially immovable relative to said rotor, and an arrangement provided between said engaging plate and said armature for engaging said armature and said engaging plate together when said armature rotates in one direction by a predetermined angle relative to said engaging plate from a position where said rollers are in said neutral position, whereby preventing said armature from further turning relative to said engaging plate in said one direction.

2. The rotation transmission device of claim 2 wherein said arrangement comprises a protrusion formed on one of opposed surfaces of said armature and said engaging plate, and a hole formed in the other, said protrusion is formed with a tapered surface adapted to be pushed by an edge of said hole when the rotational speed difference between said inner member and said rotor decreases below a predetermined value, whereby allowing said protrusion to come out of said hole and thus pushing said armature toward said solenoid.

3. A rotation transmission device comprising a two-

way clutch and a solenoid for controlling the engagement of said two-way clutch, said two-way roller clutch comprising an outer member, an inner member mounted in said outer member, said outer member having an inner cylindrical surface, said inner member having a plurality of flat cam surfaces on its outer periphery so as to be opposite to said cylindrical surface, thereby defining wedge spaces between said cylindrical surface and said cam surfaces, a plurality of rollers each mounted between said cylindrical surface and one of said cam surfaces, a retainer for retaining said rollers circumferentially separate from one another, a switch spring mounted between said retainer and said inner member for biasing said retainer toward a neutral position where said rollers are not engaged in said wedge spaces, a rotor guide mounted in said outer member and made of a nonmagnetizable material, a rotor mounted in said rotor guide and disposed between said solenoid and said retainer so as to be nonrotatable relative to said outer ring, an armature mounted between said retainer and said rotor so as to be nonrotatable relative to said retainer and axially movable toward and away from said rotor, whereby said armature is attracted to said rotor when said solenoid is energized, and a spring mounted between said rotor and said armature for axially biasing said armature away from said rotor,

said rotation transmission device further comprising an engaging plate mounted between said inner member and said armature so as to be nonrotatable relative to said inner member, rotatable relative to said rotor guide and axially immovable relative to said rotor guide, and an arrangement provided between said engaging plate and said armature for engaging said armature and said engaging plate together when said armature rotates in one direction by a predetermined angle relative to said engaging plate from the position where said rollers are in said neutral position, whereby preventing said armature from further turning relative to said engaging plate in said one direction.

4. A rotation transmission device comprising an outer ring, an inner member and engaging elements mounted between said outer ring and said inner member, characterized in that a clutch outer ring formed of a material having a high strength is mounted in said outer ring, and that said outer ring is formed of a casting.

5. A rotation transmission device as claimed in claim 4 wherein an outer sleeve formed of a material having a higher strength than said outer ring is mounted on said outer ring.

6. A rotation transmission device as claimed in claim 4 or 5 wherein the inner surface of said clutch outer ring is formed into a cylindrical surface.

7. A rotation transmission device as claimed in any of claims 4-6 wherein the high-strength material forming said clutch outer ring is a heat-treated bearing steel, carburizing steel or high-frequency steel.